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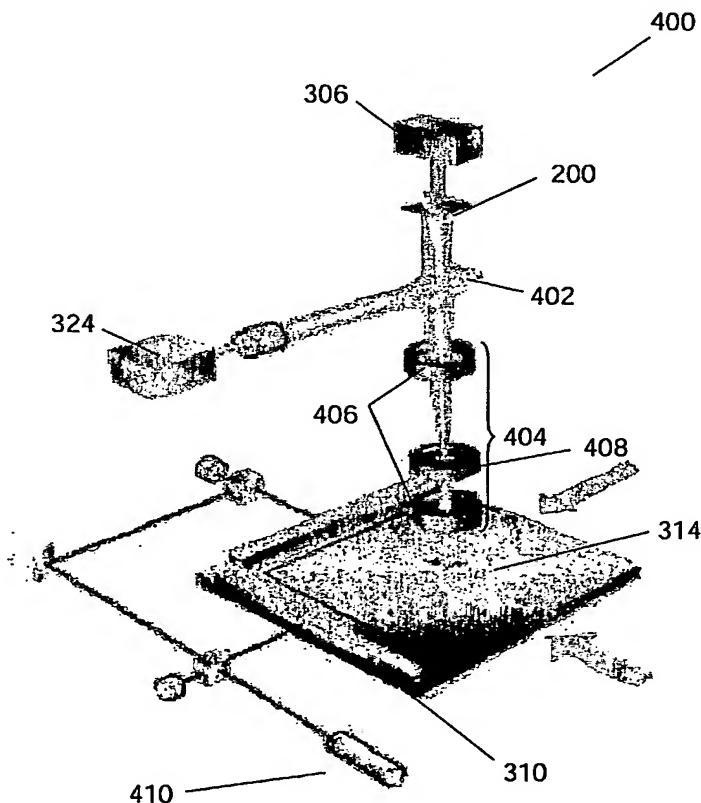
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03104914.1 22 December 2003 (22.12.2003) EP</p> <p>(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): DIRKSEN, Peter</p> | <p>[NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). HAYES, Robert, A. [AU/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). JUFFERMANS, Casparus, A., H. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). STEFFEN, Thomas [DE/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).</p> <p>(74) Agents: ELEVELD, Koop, J. et al.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).</p> <p>(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.</p> |
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(54) Title: LITHOGRAPHY SYSTEM USING A PROGRAMMABLE ELECTRO-WETTING MASK



(57) Abstract: A maskless lithography system is described having a programmable mask to allow performing several lithographic steps using the same mask. In every lithographic step, the corresponding pattern is obtained by providing a digital pattern to the programmable mask. The programmable mask includes an array of pixels which are based on the electro-wetting principle. According to this principle, every pixel has a transparent reservoir containing a first, non-polar, non-transparent fluid and a second, polar, transparent fluid which are immiscible. Applying a field to the reservoir allows to displace the fluids with respect to each other. This allows to make the pixel either transparent or non-transparent. This lithographic programmable mask allows high resolution and fast setting and refreshing. A corresponding method for performing maskless optical lithography also is described.

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